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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/006,777	01/14/1998	CHRIS L. HOOGENBOOM	100-010	4131

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CHRISTIE, PARKER & HALE, LLP
P.O. BOX 7068
OSAADENA, CA 91109-7068

EXAMINER

KWOH, JASPER C

ART UNIT PAPER NUMBER

2663

DATE MAILED: 01/15/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
09/006,777

Applicant(s)
Hoogenboom et al.

Examiner
Jasper Kwoh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Nov 13, 2001.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7-16, and 18-54 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 23-32 is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-16, 18-22, and 33-54 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on Jan 14, 1998 is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☐ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____
- 18) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other:

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DETAILED ACTION

Continued Prosecution Application

1. The request filed on 11/13/01 for a Continued Prosecution Application (CPA) under 37 CFR 1.53(d) based on parent Application No. 09/006,777 is acceptable and a CPA has been established. An action on the CPA follows.

Drawings

2. The corrected or substitute drawings were not received with the preliminary amendment filed 11/13/01 as suggested by the remarks. Examiner requests that applicant resubmit the amended FIG. 3.

Claim Rejections - 35 USC § 102

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
4. Claims 1, 5, 7-10, 16, 18-20 and 22 are rejected under 35 U.S.C. 102(e) as being anticipated by Ramamurthy et al.

Regarding claims 1 and 10, Ramamurthy et al. disclose a switch comprising a plurality of input ports (i.e. fig. 1, 100; input ports 1... M); a plurality of output ports (i.e. fig. 1, output lines 1.. M); and switch fabric (i.e. fig. 1, buffered switch, core switch bus, core switch LSI);

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wherein the output data stores are arranged to buffer data units (i.e. fig. 1, each output buffer is associated with a plurality of output data stores 120, 130, 140, 150) for delivery to output ports (i.e. fig. 1, output lines 1... M), and if the backlog reaches a particular level (i.e. col. 22, ll. 42-52, backlog occurs when the output buffer is full), the output control (fig 1, CAC, bandwidth allocator), to enforce a rate limitation (i.e. fig. 9, col. 22, ll. 50-53; monitor back pressure and control data flow), wherein the additional data units in violation of the rate limitation are filtered (i.e. col. 22, ll. 53-66; violation of rate and filtered corresponds to full buffer means congestion and cells are dropped).

Regarding claims 5, 7-9 and 16, 18-20 and 22, Ramamurthy et al. disclose a switch including when backlog falls, the output lifts the rate limitation (i.e. col. 22, ll. 50-54; no back pressure signal if buffer is not full because after congestion drops, it is inherent to start transmitting to output again at the prior uncongested bandwidth to try to maximize transmission rate); buffers are associated with both ports with distinct priority; and limitation is enforced at both ends (i.e. fig. 9, col. 22, ll. 50-54).

Claim Rejections - 35 USC § 103

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. Claims 2-4, 11-15 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ramamurthy et al. in view of Hluchyj et al.

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Ramamurthy et al. discloses input port (i.e. 100), but does not specifically disclose a priority for data units and using leaky bucket. However, Hluchyj designate a priority (i.e. fig. 4, col. 3, ll. 11-23) and high priorities (i.e. CLP=0) are not in violation while low priorities are (i.e. CLP=1) based on leaky bucket algorithm (i.e. 204). Therefore, it would have been obvious to an ordinary person skilled in the art at the time of the invention to include priorities and leaky bucket as taught by Hluchyj et al. with the method and switch of Ramamurthy et al. in order to regulate cell flow.

7. Claims 33, 37-42, 48-52 and 54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ramamurthy et al. in view of Shinohara.

Regarding claims 33 and 42, Ramamurthy et al. disclose a switch comprising a plurality of input ports (i.e. fig. 1, 100; input ports 1... M); a plurality of output ports (i.e. fig. 1, output lines 1.. M); and switch fabric (i.e. fig. 1, buffered switch, core switch bus, core switch LSI); wherein the data stores are arranged to buffer data units (i.e. figs 1 and 9, output buffers) for delivery to output ports (i.e. fig. 1, output lines 1... M), and if the backlog reaches a particular level (i.e. col. 22, ll. 42-52, backlog occurs when the output buffer is full), the output control (fig 1, CAC, bandwidth allocator), to enforce a rate limitation (i.e. fig. 9, col. 22, ll. 50-53; monitor back pressure and control data flow), wherein the additional data units in violation of the rate limitation are filtered (i.e. col. 22, ll. 53-66; violation of rate and filtered corresponds to full buffer means congestion and cells are dropped). Ramamurthy et al. does not specifically disclose output controls monitoring two or more data stores. However, Shinohara teaches output control

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(i.e. fig. 8, 3, 3a, 4) monitoring the backlog of buffered data units in two or more of said plurality of data stores (i.e. fig. 8, 2-1, 2-2, 2-3, 2-4). Therefore, it would have been obvious to an ordinary person skilled in the art at the time of the invention to include using the output controls to monitor the backlog of two or more buffers as taught by Shinohara with the method and apparatus of Ramamurthy et al. in order to conserve hardware by using controller to monitor the buffers and improve quality of service.

Regarding claims 37-41 and 48-52 and 54, Ramamurthy et al. disclose a switch including when backlog falls, the output lifts the rate limitation (i.e. col. 22, ll. 50-54; no back pressure signal if buffer is not full; therefore, after congestion drops, it is inherent to start transmitting to output again at the prior uncongested bandwidth to try to maximize transmission rate); buffers are associated with both ports with distinct priority; limitation is enforced at both ends (i.e. fig. 9, col. 22, ll. 50-54).

8. Claims 34-36, 43-47 and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ramamurthy et al. in view of Shinohara as applied to claims 33 and 42 above, and further in view of Hluchyj et al.

Ramamurthy et al. discloses input port (i.e. 100), but does not specifically disclose a priority for data units and using leaky bucket. However, Hluchyj designates a priority (i.e. fig. 4, col. 3, ll. 11-23) and high priorities (i.e. CLP=0) are not in violation while low priorities are (i.e. CLP=1) based on leaky bucket algorithm (i.e. 204). Therefore, it would have been obvious to an ordinary person skilled in the art at the time of the invention to include priorities and leaky

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bucket as taught by Hluchyj et al. with the method and switch of Ramamurthy et al. in order to regulate cell flow.

Allowable Subject Matter

9. Claims 23-32 are allowed.

Response to Arguments

10. Applicant's arguments filed 11/13/01 have been fully considered but they are not persuasive.

Regarding the objection to the drawings, the amended FIG. 3 was not included in the reply. Therefore, the object is maintained.

Regarding claims 1 and 10, applicant asserts that Ramamurthy et al. disclose only one output buffer for each output port and does not show a plurality of output data stores. Examiner respectfully disagrees. Each output port is associated with a plurality of output data stores (i.e. fig 1, 120, 130, 140, 150). The name of the data store does not make something novel and unobvious. The structure and function as claimed are equivalent to the reference; therefore, output data stores reads on the CBR, VBR, ABR, UBR partitioned buffer. Because the structure and function of stores of fig 1, 120, 130, 140, 150 read on the output data store as claimed, the rejection to claims 1-5, 7-16 and 18-22 is maintained.

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In response to applicant's argument of claims 33 and 42 that the Shinohara reference teaches each buffer is associated with one output port and a single controller monitors a plurality of ports and not an output control to monitor backlog in two or more output data stores each associated with the same output port, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). The teaching used from Shinohara is that a output control can monitor a plurality of data stores. The data stores are associated with an output port disclosed in Ramamurthy et al. Therefore, as explained above, it would be obvious to use the backlog strategy of Shinohara on the plurality of data stores that are associated with each output of Ramamurthy et al. in order to improve quality of service.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jasper Kwoh whose telephone number is (703) 305-0101.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau Nguyen, can be reached on (703) 308-5340.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-4700.

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12. **Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

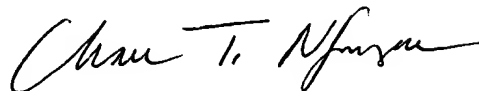
(703) 872-9314

Hand-delivered responses should be brought to Crystal Park II, 2021 Crystal Drive, Arlington. VA., Sixth Floor (Receptionist).

Jasper Kwoh



January 12, 2002



CHAU NGUYEN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600